

ABSTRACT

This invention presents a plasma-enhanced processing apparatus, comprising; a process chamber in which a substrate is processed, a pumping system that pumps the process chamber, a gas-introduction system that introduces process gas into the process chamber, a plasma-generation means that generates plasma in the process chamber by applying energy to the process gas, a substrate holder that holds the substrate in the process chamber. An opposite electrode facing to the substrate held by the substrate holder is provided. The opposite electrode comprises a clamping mechanism that clamps the front board to support it. The opposite electrode comprises a main body, and a cooling mechanism that cools the front board via the main body. The clamping mechanism clamps the periphery of the front board by a clamping plate in surface contact with the front board. The clamping plate is flush with the front board.